

WHAT IS CLAIMED IS:

1. A method for obtaining data, said method comprising:

scanning myocardial tissue of a patient with an Energy Discrimination Computed Tomography (EDCT) system to acquire data; and

analyzing the acquired data for at least one of cardiac measurements, diagnosis, and prognosis after interventions.
2. A method in accordance with Claim 1, wherein said scanning comprises scanning myocardial tissue to acquire perfusion data, said method further comprising determining at least one of a defect and a tissue viability based upon the acquired perfusion data.
3. A method in accordance with Claim 2 wherein said scanning comprises generating a time-delayed series of cardiac images for measurement of perfusion levels in at least one part of a myocardium.
4. A method in accordance with Claim 1 wherein said analyzing comprises analyzing the acquired data to determine a cardiac function.
5. A method in accordance with Claim 4 wherein said analyzing comprises producing a delineation of a ventricular myocardium from a contrast-filled blood pool, wherein said producing comprises:

separating at least one ventricle from anatomy surrounding the ventricle; and

separating contrast-filled blood in the ventricle from ventricular tissue at at least one of an end diastole and an end systole.
6. A method in accordance with Claim 1 further comprising separating soft plaque and calcified plaque from a contrast agent in a coronary artery.

7. A method in accordance with Claim 1 further comprising detecting at least one structural defect in a heart muscle.

8. A method in accordance with Claim 1 further comprising performing an automated bone segmentation.

9. A method in accordance with Claim 1 wherein said analyzing comprises performing a Compton and photoelectric decomposition of the acquired data to differentiate abnormal regions of myocardial tissue from normal regions of myocardial tissue and delineate at least one of a contrast agent, a calcified plaque, and a bone from the myocardial tissue.

10. A method in accordance with Claim 1 wherein said analyzing comprises performing a Basis Material Decomposition (BMD) of the acquired data to differentiate abnormal regions of myocardial tissue from normal regions of myocardial tissue and delineate at least one of a contrast agent, a calcified plaque, and a bone from the myocardial tissue.

11. An Energy Determination Computed Tomography (EDCT) System comprising:

a radiation source;

a radiation detector; and

a computer coupled to said radiation source and said radiation detector, said computer configured to:

acquire data regarding a first energy spectrum of a scan of myocardial tissue of the patient;

acquire data regarding a second energy spectrum of the scan and

analyze the acquired data for at least one of cardiac measurements, diagnosis and prognosis after interventions.

12. A system in accordance with Claim 11, wherein said computer further configured to acquire myocardial perfusion data to determine at least one of a defect and a tissue viability based upon the acquired perfusion data.

13. A system in accordance with Claim 12 wherein said computer further configured to generate a time-delayed series of cardiac images for measurement of perfusion levels in at least one part of a myocardium.

14. A system in accordance with Claim 11 wherein said computer further configured to determine a cardiac function based upon the acquired data.

15. A system in accordance with Claim 14 wherein said computer further configured to produce a delineation of a ventricular myocardium from a contrast-filled blood pool in the ventricle, wherein to produce a delineation, said computer is configured to separate at least one ventricle from anatomy surrounding the ventricle and separate contrast-filled blood in the ventricle from ventricular tissue at at least one of an end diastole and an end systole.

16. A system in accordance with Claim 11 wherein said computer further configured to separate soft plaque and calcified plaque from a contrast agent in a coronary artery.

17. A system in accordance with Claim 11 wherein said computer further configured to detect at least one structural defect in a heart muscle.

18. A system in accordance with Claim 11 wherein said computer further configured to perform an automated bone segmentation.

19. A computer readable medium encoded with a program configured to instruct a computer to:

receive data regarding a first energy spectrum of a scan of myocardial tissue of the patient;

receive data regarding a second energy spectrum of the scan and
analyze the acquired data for at least one of cardiac measurements, diagnosis
and prognosis after interventions.

20. A computer readable medium in accordance with Claim 19 wherein said
program further configured to instruct the computer to:

delineate a ventricular myocardium from a contrast-filled blood pool by:

separate at least one ventricle from anatomy surrounding the
ventricle; and

separate contrast-filled blood in the ventricle from ventricular tissue at
at least one of an end diastole and an end systole.